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Army Service Forces
Quartermaster Corps
CLIMATIC RESEARCH LABORATORY
Lawrence, Massachusetts

SECURITY OFFICER

Frank B. Rogers Monthly Report - 2 April 1945

1. The following reports were sent to the Office of The Quartermaster General for the approval of General Georges F. Doriot:

Report No. 114 - 15 March 1945

Cases for Bag, Sleeping, Mountain, Standard and Experimental Items
Moisture Disposition and Thermal Insulation
Six Tables and One Figure

Six combinations of Bag, Sleeping, Mountain, with or without a case for same were studied. The combinations were as follows:

1. Bag, Sleeping, Mountain, Standard Type, with Case, Water Repellent
2. Bag, Sleeping, Mountain, Nylon Inner and Outer Surfaces, with Case, Water Repellent
3. Bag, Sleeping, Mountain, Standard Type, with Case made of Oxford (Jo) Cloth
4. Bag, Sleeping, Mountain, Standard Type, with Case, Water Impermeable
5. Bag, Sleeping, Mountain, Oxford (Jo) Cloth Outer Surface, Alone
6. Bag, Sleeping, Mountain, Oxford (Jo) Cloth Outer Surface, with Case, made of Oxford (Jo) Cloth

The tests were conducted in the All Weather Chamber where rain intensities of 1.5 and 4.0 inches per hour were produced as well as a wet undersurface without any overhead rain. Thermal insulation studies were pursued in the Cold Room at an ambient temperature of plus 10°F. after exposure to an artificial rainfall of 3 inches per hour in the Rain Court.

It was concluded that the moisture content of the bag itself and the effect upon thermal insulation of same, is the most important single consideration in appraising the water repellency of combinations of bags and cases.

The Oxford cloth covered bag with no case generally shows less moisture uptake than any of the other combinations studied. However, since all of this moisture is in the bag itself, this item cannot be considered

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the most desirable. It is the most satisfactory from a simple weight standpoint, but poorest of the entire group insofar as thermal insulation is concerned.

The mountain bags protected by the impermeable case and the Oxford cloth case, respectively, show significantly less moisture uptake than those protected by water repellent cases. Therefore, in view of the defects of the impermeable cases which are already well known, it is believed that the Oxford cloth cases are the most desirable.

The high moisture uptake of the Oxford cloth cases constitutes their most serious defect.

The type of material covering a sleeping bag definitely affects the amount of moisture passing through the case in apposition to it. Nylon causes the greatest moisture uptake. In a heavy rainfall the Oxford cloth material is superior to the regular covering of the mountain bag in this respect.

Nylon is the preferred material for the lining of sleeping bags.

A sleeping bag with no case is more convenient from a subjective standpoint, than one fitted with a case.

The ideal type of bag and case combination for maximum water repellency, most adequate protection in thermal insulation, and greatest subjective desirability would be a nylon lined, Oxford cloth covered mountain bag with an Oxford cloth case.

The Poncho, when used in combination with supports to keep it off the face, is the most suitable of several items tested for use as adjuncts in protecting against overhead rainfall.

Report No. 147 - 26 March 1945

Stove, Cooking, Gasoline, 1-Burner

Comparative Efficiency and Operating Characteristics of

Models M-1941 and M-1942, Modified

Nine Tables and Three Figures

The M-1941 model one-burner gasoline stove was compared with the M-1942 modified item in the Cold Room at ambient temperatures of plus 30°F., 0°F. and minus 40°F., respectively. Wind conditions were either the turbulent air of 1.5 mph. of the Cold Room or a horizontal 5 mph. wind produced by a fan. The 0.010" orifice generator was compared with the 0.008" orifice.

The heat output of the M-1942 stove was found to be inferior to the heat output of the M-1941 stove under all test conditions.

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The fuel consumption of the two stoves was essentially similar but in neither of them was it equal to or below the standard set by the test directive, i.e., 0.3 pint per hour per stove.

The use of generators with a 0.010" orifice instead of an 0.008" orifice did not increase the heat output of the stove.

The M-1942 stove proved more difficult to service and to maintain at maximum operating efficiency.

The M-1942 stove was easier to light than the M-1941 stove.

2. Provisional Report, 7-9 March 1945, discussed the efficiency of tent pins in Limestone Rock under investigation at the Homestead Proving Ground in Florida. Experimental observations upon eleven types of tent pins were reported.

3. The Wet Cold Field Trials at Fort Preble, Maine, under the supervision of Captain Clinton, Test Officer in Charge, are progressing and will terminate late in April. Most items submitted for test arrived in time to be investigated under appropriate ambient conditions in the field. The detail of the test officers and plans for the test group are similar to those discussed in previous Monthly Reports.

4. In the Provisional Reports during the month, tests on the following items were discussed:

Jungle Uniforms
Solid Fuel
Water Repellent Mittens
Anti-Fog Goggles
Thermoelectric Psychrometer
Bag, Sleeping, Wool
Opener, Can, Folding
Water Repellent Shoepac
Sock, Felt, 56-oz.
Thermal Insulation of Sleeping Bag Fills
Water Repellent German Boot
Drier, Clothes, Portable

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